

ABSTRACT:

The concept of B-frames gives the MPEG video compression standard its high encoding efficiency. However, B-frame encoding roughly doubles the complexity of an MPEG encoder. In view thereof, MPEG encoders have been developed which produce I-frames and P-frames only. They are less complex but also less efficient. To improve the efficiency of such "IPP encoders", selected P-frames are quantized more coarsely than other P-frames, for example, by multiplying the conventional quantization step size by 1.4. Although this results in isolated frames ("virtual B-frames") being encoded with a lower quality, the overall perceptual quality is not affected. It has been found that the gain in bit rate obtained by the coarser quantization is not lost in subsequent P-frames, even though the subsequent frames are encoded with reference to the lower quality frames.

(Fig. 1).